

Notice of Allowability

Application No.

09/602,395

Examiner

Thanhha Pham

Applicant(s)

MOORE, JOHN T.

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 05/12/047.
2. ☒ The allowed claim(s) is/are 1-16, 29 and 30.
3. ☒ The drawings filed on 6/22/00 and correction 08/06/02 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 05/12/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

DETAILED ACTION

This Office Action is in response to Applicant's Request for Continued Examination (RCE) dated 05/12/04.

Allowable Subject Matter

1. Claims 1-16 and 29-30 are allowed.
2. The following is an examiner's statement of reasons for allowance: Recorded Prior Art fails to disclose a method of forming an oxide region over a semiconductor substrate comprising: introducing nitrogen into the non-oxide material to form a nitrogen-comprising surface region layer across at least some of the exposed silicon surface of the semiconductor substrate, the surface region extending greater than zero angstroms and no greater than 10 angstroms beneath the exposed silicon surface; and after forming the nitrogen comprising layer, growing an oxide region from the at least some of the semiconductor substrate, the oxide region having a thickness of at least about 70 angstroms, the nitrogen of the nitrogen-comprising layer being dispersed within the oxide region as characteristics in claim 1. Recorded Prior Art fails to disclose a method of forming a pair of oxide regions over a semiconductor substrate comprising: introducing nitrogen to form a nitrogen-comprising oxide layer across at least some of the first oxide region and a nitrogen-comprising non-oxide layer across at least some of the second portion of the semiconductor substrate, the nitrogen-comprising oxide layer extending greater than zero and less than or equal to about 10 angstroms beneath a

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surface of the first oxide region and the nitrogen-comprising non-oxide layer extending greater than zero and less than or equal to about 10 angstroms beneath the exposed surface of the second portion of the semiconductor substrate; after introducing nitrogen, growing a second oxide region from the at least some of the second portion of the semiconductor substrate, the second oxide region having a thickness of at least about 70 angstroms as characteristics in claim 12. Recorded Prior Art also fails to disclose a method of forming a pair of oxide region over a semiconductor substrate comprising: forming a first oxide layer over a first portion of the semiconductor substrate, a second portion of the semiconductor substrate having an exposed non-oxide material surface; introducing nitrogen into at least some of the first oxide layer and into at least some of the exposed non-oxide material across at least some of the second portion of the semiconductor substrate; and after introducing nitrogen, exposing the substrate to oxidizing conditions to grow a second oxide layer from the at least some of the second portion of the semiconductor substrate, the second oxide layer having a thickness exceeding a thickness of the first oxide layer after the exposing, the nitrogen introduced into the second portion being dispersed within the second oxide layer as characteristics in claim 29.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanhha Pham whose telephone number is (571) 272-1696. The examiner can normally be reached on Monday and Thursday 9:00AM - 9:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thanhha Pham